

Pursuing early catheter ablation to treat atrial fibrillation in the congestive heart failure population: significance of the AATAC trial results

Karen P. Phillips

Heart Care Partners, Greenslopes Private Hospital, Newdegate St, Greenslopes, Brisbane, Australia

Correspondence to: Karen P. Phillips. Suite 212, Ramsay Specialist Centre, Newdegate St, Greenslopes, Brisbane 4120, Australia.

Email: kphillips@heartcarepartners.com.au.

Submitted Jun 12, 2016. Accepted for publication Jun 21, 2016.

doi: [10.21037/jtd.2016.06.78](https://doi.org/10.21037/jtd.2016.06.78)

View this article at: <http://dx.doi.org/10.21037/jtd.2016.06.78>

The current 2013 ACCF/ AHA Clinical Guideline for the Management of Heart Failure state that a rhythm-control strategy has not been shown to be superior to a rate-control strategy in patients with heart failure who develop AF (1). Further it states that the main goals of therapy should simply be the prevention of thromboembolism and symptom control (1). The recommendations are based on a randomized control trial which compared a rhythm strategy using predominantly Amiodarone and electrical cardioversion with standard rate control and showed no significant difference in mortality (2). The 'prevalence' of atrial fibrillation on 12 lead electrocardiography at 4 years follow-up was 27% in the rhythm control group and ranged between 59 and 70% over follow-up in the rate control arm (2). However catheter ablation has been shown to be remarkably more efficacious at achieving long term sinus rhythm and freedom from AF than antiarrhythmic drug therapy (3) and a randomized control trial to examine outcomes in a heart failure population had been anxiously awaited.

The results of the AATAC Ablation versus Amiodarone for the treatment of persistent atrial fibrillation (AF) in patients with congestive heart failure published in *Circulation* journal April 2016 (4) should have the writers of Clinical Guidelines sharpening their pencils again. The superiority of catheter ablation for conferring freedom from atrial fibrillation/atrial tachycardias (AF/AT) over a 24-month period translated into a clinically and socio-economically significant reduction in unplanned hospitalisations (45% relative risk reduction) and mortality (56% relative risk reduction) as compared with a rhythm

control strategy using Amiodarone (4). The validity of the results is further strengthened by the use of stringent monitoring for AF/AT in a population with implanted cardiac rhythm monitoring.

The result from this randomized control trial now adds to existing evidence that AF in a population with left ventricular systolic dysfunction (5,6) should be regarded with relative urgency as not just a prognostic marker for poor outcome, but as a valid treatment target which should prompt early referral for a catheter ablation strategy.

The results are of course remarkable for the high rate of freedom from AF/AT (70% at 24 months) achieved in a population known to traditionally have poorer success rates than paroxysmal or other subgroups of persistent AF (7). Although recognized as a potentially challenging group to treat even modest success rates from catheter ablation are still likely to translate into clinical benefit emphasizing the 'high risk, high gain' nature of this population. The high event rates (frequent hospitalisations and mortality rate) also highlight the clinical importance of catheter ablation therapy as a successful intervention given that marked superiority can be demonstrated in such a small cohort. Healthcare economists should be impressed by the number needed to treat equations—the NNT was 3.8 to prevent one unplanned hospitalisation and NNT was 10 to prevent one death. Few other advances in heart failure treatment in recent decades have approached this calibre of risk reduction.

However the clinician should also be cautioned against concluding from the AATAC trial that Amiodarone and intermittent electrical cardioversions are a futile strategy.

Indeed this is an initial strategy accessible to any Clinician in the smallest of hospitals or clinics. One third of heart failure patients in the study were AF- free according to stringent device-detected arrhythmia monitoring with this treatment modality. Clinicians should still be encouraged, however, to instigate referral for consideration of catheter ablation as the cornerstone of long term success. Further, the treatments need not also be mutually exclusive. Benefit has been previously shown for a strategy of returning patients to sinus rhythm as soon as possible using electrical cardioversion (and antiarrhythmic drug therapy) that subsequently conferred improved outcomes from a planned catheter ablation (8). This may then partly explain the remarkable success of the catheter ablation arm in the AATAC study as 12 of the 102 patients were already prescribed ‘low dose’ Amiodarone prior to randomisation.

There will inevitably be pessimism about the long term outcomes from this strategy given the well documented progressive recurrence rates in the persistent AF population following initially successful catheter ablation treatment (7,9). While freedom from AF/AT is a binary outcome useful for research, the real world may be more forgiving of a low burden of AF or infrequent recurrences that may still be associated with a good clinical outcome (7,9,10). Further data on the device-detected AF/AT burden in the catheter ablation and Amiodarone arms respectively of AATAC would therefore be meaningful. The conversation may inevitably need to move away from the language and expectation of ‘perfect’ complete freedom from AF to pragmatic control of AF or an acceptably low AF burden.

Future perspectives

The long term control of AF has been significantly advanced by catheter ablation treatment (3,9). Part of the quest to improve long term control of AF or limit AF burden should also include the role of adjunctive interventions. Future studies should therefore examine the question of whether long term adjunctive antiarrhythmic drug therapy (including low dose) can further improve the ‘response rates’ and reduce recurrences of AF after catheter ablation in the heart failure population.

The study is powerful as a proof of concept, however it has by no means clarified the appropriate ablation strategy for the heart failure population. Caution should still be advised about routinely undertaking the proposed aggressive strategy of pulmonary vein antral isolation in addition to “extensive ablations on the left atrial posterior

wall” (2). The recent lessons from the STAR AF II trial in the persistent AF population highlighted the potential for increased procedural complications and radiation exposure from more complex ablation strategies without a substantiated improvement in clinical efficacy (11). Further the documented improvements in durable PV isolation and ablation outcomes that have accompanied catheter tip force-sensing technologies (12) now in routine clinical use (that were not employed in the AATAC study) also indicate that the question is far from answered. Further trials will be required to assess the cornerstone minimum ablation strategy recommended for the first catheter ablation procedure in this population given that there is general acceptance that a redo ablation procedure will likely be required at some point in many patients to secure long term efficacy.

The results of the recent AATAC multicentre randomized trial open a new door for the heart failure population with AF. Clinicians should not be deterred by the challenges and imperfect results that can be achieved by catheter ablation in the persistent AF population with congestive heart failure. I often counsel my own patients with a simple analogy that the path ahead will not be paved in gold and there will almost certainly be bumps in the road, but to not take the first step into the future for fear of stumbling would be uncourageous.

Acknowledgements

None.

Footnote

Provenance: This is an invited Editorial commissioned by Section Editor Fang-Zhou Liu (Guangdong Cardiovascular Institute, Guangzhou, China).

Conflicts of Interest: The author has no conflicts of interest to declare.

Comment on: Di Biase L, Mohanty P, Mohanty S, *et al.* Ablation Versus Amiodarone for Treatment of Persistent Atrial Fibrillation in Patients With Congestive Heart Failure and an Implanted Device: Results From the AATAC Multicenter Randomized Trial. *Circulation* 2016;133:1637-44.

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Cite this article as: Phillips KP. Pursuing early catheter ablation to treat atrial fibrillation in the congestive heart failure population: significance of the AATAC trial results. *J Thorac Dis* 2016;8(8):1913-1915. doi: 10.21037/jtd.2016.06.78